

## ABSTRACT

525 The present invention provides a radiation detector in which primary electrons are released into a gas by ionizing radiation from a radiation source (10) and are caused to drift to read-out electrodes (1) by means of an electric field (2) generated by applying a negative  
530 tension to a drifting electrode (11) located near the radiation source (10), characterized in that it comprises three sets of longitudinal electrodes (1) forming three superposed planes which are substantially perpendicular to said electric field (2), the longitudinal electrodes  
535 (1) in the respective planes being applied progressively positive tensions relatively to the drifting electrode (11) when going from the plane (4) closest to the drifting electrode to the plane (4'') farthest from the drifting electrode, said plane (4'') farthest from the  
540 drifting electrode being applied a positive tension.